
Elektroakustika - Sistemi z avdiofrekvenčno indukcijsko zanko za slušne pripomočke - 2. del: Metode za računanje in merjenje nizkofrekvenčnih sevanj magnetnega polja iz zanke pri ocenjevanju skladnosti s smernicami o omejitvi izpostavljenosti ljudi (IEC 62489-2:2011)

Electroacoustics - Audio-frequency induction loop systems for assisted hearing - Part 2: Methods of calculating and measuring the low-frequency magnetic field emissions from the loop for assessing conformity with guidelines on limits for human exposure (IEC 62489-2:2011)

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Akustik - Audiofrequenz-Induktionsschleifenanlagen zur Unterstützung von Hörsystemen - Teil 2: Verfahren zur Berechnung und Messung der niederfrequenten Emissionen des durch die Schleife erzeugten Magnetfeldes zur Einschätzung der Konformität mit Richtlinien zu Grenzwerten für die Belastung des Menschen (IEC 62489-2:2011)

Electroacoustique - Systèmes de boucles d'induction audiofréquences pour améliorer l'audition - Partie 2: Méthodes de calcul et de mesure des émissions de champ magnétique basse fréquence à partir de la boucle pour l'évaluation de la conformité aux instructions sur les limites d'exposition humaine (CEI 62489-2:2011)

Ta slovenski standard je istoveten z: EN 62489-2:2011

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17.140.50	Elektroakustika	Electroacoustics

SIST EN 62489-2:2011

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EN 62489-2

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English version

**Electroacoustics -
Audio-frequency induction loop systems for assisted hearing -
Part 2: Methods of calculating and measuring the low-frequency magnetic field
emissions from the loop for assessing conformity with guidelines on limits for
human exposure
(IEC 62489-2:2011)**

Electroacoustique -
Systèmes de boucles d'induction
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Akustik -
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Messung der niederfrequenten
Emissionen des durch die Schleife
erzeugten Magnetfeldes zur Einschätzung
der Konformität mit Richtlinien zu
Grenzwerten für die Belastung des
Menschen
(IEC 62489-2:2011)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 29/728/FDIS, future edition 1 of IEC 62489-2, prepared by IEC TC 29, Electroacoustics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62489-2 on 2011-03-02.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2011-12-02
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-03-02

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62489-2:2011 was approved by CENELEC as a European Standard without any modification.

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 62226-1	NOTE Harmonized as EN 62226-1
IEC 62233	NOTE Harmonized as EN 62233

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60118-4	-	Electroacoustics - Hearing aids - Part 4: Induction loop systems for hearing aid purposes - Magnetic field strength	EN 60118-4	-
IEC 60268-1	-	Sound system equipment - Part 1: General	HD 483.1 S2	-
IEC 60268-2	-	Sound system equipment - Part 2: Explanation of general terms and calculation methods	HD 483.2 S2	-
IEC 60268-10	1991	Sound system equipment - Part 10: Peak programme level meters	HD 483.10 S1	1993
IEC 61786	-	Measurement of low-frequency magnetic and electric fields with regard to exposure of human beings - Special requirements for instruments and guidance for measurement	-	-
IEC 62226-2-1	2004	Exposure to electric or magnetic fields in the low and intermediate frequency range - Methods for calculating the current density and internal electric field induced in the human body - Part 2-1: Exposure to magnetic fields - 2D models	EN 62226-2-1	2005
IEC 62311 (mod)	2007	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)	EN 62311	2008

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Electroacoustics – Audio-frequency induction loop systems for assisted hearing –

Part 2: Methods of calculating and measuring the low-frequency magnetic field emissions from the loop for assessing conformity with guidelines on limits for human exposure

Electroacoustique – Systèmes de boucles d'induction audiofréquences pour améliorer l'audition –

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTROACOUSTICS –
AUDIO-FREQUENCY INDUCTION LOOP SYSTEMS
FOR ASSISTED HEARING –**

**Part 2: Methods of calculating and measuring the low-frequency
magnetic field emissions from the loop for assessing conformity
with guidelines on limits for human exposure**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62489-2 has been prepared by IEC technical committee 29: Electroacoustics.

The text of this standard is based on the following documents:

FDIS	Report on voting
29/728/FDIS	29/736/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62489 series, published under the general title *Electroacoustics – Audio-frequency induction loop systems for assisted hearing*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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ELECTROACOUSTICS – AUDIO-FREQUENCY INDUCTION LOOP SYSTEMS FOR ASSISTED HEARING –

Part 2: Methods of calculating and measuring the low-frequency magnetic field emissions from the loop for assessing conformity with guidelines on limits for human exposure

1 Scope

This part of IEC 62489 applies to audio-frequency induction-loop systems for assisted hearing. It may also be applied to such systems used for other purposes, as far as it is applicable. The standard is intended for assessment of human exposure to low-frequency magnetic fields produced by the system, by calculation and by in-situ testing.

This standard does not deal with other aspects of safety, for which IEC 60065 applies, or with EMC.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60118-4, *Electroacoustics – Hearing aids – Part 4: Induction loop systems for hearing aid purposes – Magnetic field strength*

IEC 60268-1, *Sound system equipment – Part 1: General*

IEC 60268-2, *Sound system equipment – Part 2: Explanation of general terms and calculation methods*

IEC 60268-10:1991, *Sound system equipment – Part 10: Peak programme level meters*

IEC 61786, *Measurement of low-frequency magnetic and electric fields with regard to exposure of human beings – Special requirements for instruments and guidance for measurements*

IEC 62226-2-1:2004, *Exposure to electric or magnetic fields in the low and intermediate frequency range – Methods for calculating the current density and internal electric field induced in the human body – Part 2-1: Exposure to magnetic fields – 2D models*

IEC 62311:2007, *Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz)*

3 Rated values

The term rated means 'the value stated by the manufacturer'. Rated values are of two kinds: rated conditions, fundamental values that cannot be verified by measurement, and others that can be so verified. For a full explanation, see IEC 60268-2.